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SCHOOL AND SOCIETY

WITH WHICH ARE COMBINED THE EDUCATIONAL REVIEW, ESTABLISHED IN 1891, THE TEACHERS MAGAZINE, ESTABLISHED IN 1878, AND THE SCHOOL JOURNAL, ESTABLISHED IN 1874.

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DE EDUCATIONIS STATU[1]

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PRESIDENT OF THE UNITED CHAPTERS OF PHI BETA KAPPA

THE series of annual lectures, of which the present essay is fourth in order, came into existence through the suggestion that some clarification of the interrelationships between the sciences and the humanities would be of advantage to workers in both these fields. The aim of this institution has been happily realized in three thoughtful addresses, which dealt respectively with a reinterpretation of Emerson's century-old "American Scholar," the cultivation of a wholesome balance between specialization and general training, and an edifying revelation of Shakespeare's extravagant critics. The first two lecturers in the series were distinguished scholars and college presidents; the third has long been known as both a profound specialist and a brilliant speaker.

Following such an array of talent, the exhorter this evening comes from the schoolmaster's bench and aims but to present that garden variety of human activities known as education from the standpoint of modern science and the liberal arts. While attempting to describe education from a scientific point of view, the speaker has no hope of being able to masquerade as a scientist. Indeed, he can scarcely pose any longer as a representative either of the humanities or of education, although, like a certain applicant for the advertised "position of organist and choirmaster, male or female," he could claim once to "have been both of them." From the angle of classical scholarship it would with reason be held that he started out as a Hellenist but easily backslid into the Avernus of pedagogy, while educationists would insist that he has only partially been resurrected from a limbo of departed languages into new contact with life, and that somewhat *less* abundantly. Yet, distrusted though he may be as a deserter to the Philistine camp in the one case and as a former ally of antiquarians in the other, he still feels that something is to be said for the batrachian in the fable, who, having escaped from the pike by leaping upon the land and from the stork by diving back into the pool, was accused of being "neither one thing nor the other," and replied that at times he found it rather convenient to be amphibious. Such duality of experience ought at least to foster a more unbiased outlook, if it does not furnish the type of *irenicon* sought in this set of addresses.

[1] Annual address under the joint auspices of the American Association for the Advancement of Science and the Society of Phi Beta Kappa, given at Richmond, The Mosque, December 29, 1938, 8 P.M. The previous addresses under this cooperative arrangement were made by Wm. Allan Neilson, James R. Angell and George L. Kittredge.

I

In its various phases the subject of education has been classed by its votaries among both the humanities and the sciences, although possibly to Phi Beta Kappans and

members of the Triple A.S. it may seem like a quasi-humanity or a pseudo-science. The subject was at first associated with history, philosophy and sociology, but in some other respects it now aims to be grouped with biology, physiology and psychology. As far as the former subjects are concerned, it is seen to stand or fall with them. The history, the philosophy and the sociology of education have each been adopted as a *Fach* by competent workers, and most of them hold the pass-word for admission to the academic lodge.

Of course the legitimacy of the entire field of which each of these subjects represents the educational side, has in the past been called in question by various sceptics. Voltaire, for example, said of certain famous histories: *ne sont que des fables convenues;* such deep philosophers as Leibnitz, Kant and Hegel have by some been irreverently likened to "a blind man in a dark cellar looking for a black cat which is not there"; while the man who referred in public to "sociology and other subjects" was promptly interpellated as to "why this tautology?" But certainly as far as any of these primal disciplines has been recognized as a reputable field of learning, its educational phase must likewise come within the scholastic pale. Such investigations as Woody's "History of Women's Education in the United States," Dewey's "Democracy and Education" and Lynd's "Middletown in Transition" can hold their own in rigid scholarship and procedure with any products of the general historian, philosopher or sociologist.

In such aspects, then, education may well be grouped with the humanities. But in this presence we may more appropriately inquire as to whether education can reasonably be accounted a science, and educational research be included in the category of scientific investigations. Such a sublimation of the field would assuredly be an ambition worthy of our best efforts; "a consummation devoutly to be wished." We are living to-day in a scientific epoch, and science is indeed a word to conjure with. During the brief centuries that have elapsed since Copernicus upset the Ptolemaic theory of the universe, Harvey shattered Galen's explanation of the circulation of the blood, and Newton formulated the laws of gravitation and motion, the development of the sciences has been rapid and extensive. All the citadels of ignorance, superstition and prejudice have successively been stormed and taken through new discoveries or a new marshaling of facts previously uncovered.

Hence the scientist is no longer to be regarded as a madman or a magician in league with the Adversary, except perchance by antivivisectionists and the followers of John Jasper or Father Divine. He can not yet vie in public importance with the athlete, the pugilist, the politician, the financier or the evangelist as a center of public interest, even if his name does, to his disgust, sometimes appear upon the front page of the daily press. While he can never hope to be classed with Ford, Morgan and Rockefeller —save through occasional avenues of inheritance or matrimony—he is not often found to be in that "one third of the Nation ill-housed, ill-clad, and ill-nourished."

In such an era of science and research, then, would it not seem inconsistent if education, the instrument through which an understanding of science is spread and most of the scientists trained, were not itself seeking to become a field of investigation and discovery? At any rate, educationists have of late been putting forth efforts to justify their work on this ground and to relieve themselves of jealousy and antagonism upon the part of persons traditionally suspicious of even gift-bearing Greeks. Moreover, those professing the subject of education have valiantly striven to drive out politicians, mountebanks and all "lewd fellows

of the baser sort," and to enter the courtroom of science with clean hands.

Education has, in consequence, begun to come into its own. Such leading honor societies as Sigma Xi and Phi Beta Kappa have of recent years been known to admit specialists in education to their ranks, a section (Q) of this illustrious American Association for the Advancement of Science has been devoted to the subject, while organized research in city school systems and in higher institutions of learning has already given promise of the greater contributions that education will eventually make. Literally hundreds of well-trained men and women have honestly endeavored to place this subject upon a safe and not merely "sound" basis. On the other hand, the "hot air artist," the teachers' "instituter," the ladies' club lecturer and the "white rat psychologist" have alike been forced to cease their activities as pretenders to the throne of education.

II

There are, however, grave obstacles to be encountered in the scientific development of education. If we compare the situation of educational research with that in any of the physical and natural sciences, it will readily be seen that the subject fairly bristles with difficulties. Not the least of these is the fundamental fact that human intelligence, which conditions both the data and the procedure of education, would appear to be exceedingly complex and unpredictable. It does not lend itself to pigeon-holing and classification as naturally as temperature, weight or the force of the wind, and it can not be altogether metered and charted by slide rule, scales or cymograph. Similarly, the environment—physical, mental, social—in which education has to "live, move, and have its being" is varied, complicated and confused through individual differences. Hence, in his efforts to fashion instruments of measure, the worker in educational research is ever found to be "sore let and hindered."

Yet the development of every science must primarily depend upon the possibility of precision in measuring it. Astrology did not become astronomy, nor alchemy chemistry, nor natural history biology, until definite standards and means of measurement were devised for the procedure of each. Unless we can state with some exactitude what education seeks and are able to secure comparative accuracy in computing degrees of intelligence and in measuring educational products, we are bound to be seriously crippled in carrying on research in the field. It is, therefore, gratifying that, despite the natural handicaps in such a movement, our efforts have of late met with noteworthy success, and considerable progress in measuring education scientifically has come into evidence.

Extensive sets of technics for determining the quality of intelligence and of achievement in education have been evolving and have constantly improved. The Binet-Simon tests were brought to this country almost a generation ago and adapted and developed by such American investigators as Goddard, Kuhlman and Terman. During the World War a strong impulse was given the tendency through the creation of measures for rating and classifying the young men who were going to the front. Our imagination was completely captured by the boldness of the movement. There quickly sprang up a variety of "group tests," such as the Detroit, Haggerty, National, Terman and Otis productions, through which the mental abilities of all pupils in a single class or an entire school or college could be measured within a few hours.

The outburst of enthusiasm and speedy growth that arose was characterized by a tremendous over-rating of the tests. This was inevitably followed by a period of reaction and heavy discount in evaluating them.

Bagley declared that all existing types of tests failed to measure some very essential ingredients of intelligence. Link, on the other hand, showed that they measured too much and included some items that could not be classified as any part of native intelligence. Cattell pointed out that the tests were too largely confined to the measurement of literary tasks. Later, evidence appeared that the measure of intelligence might sometime be increased or diminished through environmental factors.

Such a tendency toward extreme depreciation, however, could not last. There soon opened a new era during which it came to be recognized that, while the tests were crude and incomplete, some modest but substantial gains had been made through their formulation. The tests were a step in the right direction, but they needed to be supplemented by more careful and extended studies, and within the past fifteen or twenty years they have been made to cover more and more factors in intelligence and have constantly been refined. Much has been done toward working out the measurement of primary and special abilities, aptitudes and attitudes, and traits of personality and character. It has likewise been realized that we should not so much seek to evaluate isolated facts as to ascertain the meaning of various factors involved in the better understanding and improved guidance of intellectual and educational processes.

III

Similarly, precise measures of achievement in most school subjects have been created. The movement along these lines began possibly a few years later than intelligence testing, but covered roughly the same period. Two forms of measurement known as "scales" and "tests" were early devised for this purpose. Combinations of the latter measurements called "battery tests" were also established to ascertain the average standing of a pupil or the effectiveness of a school as a whole. These came to be generally used in classification and promotion, in educational guidance and in that popular form of investigating a school system called a "survey" or an "inquiry." Then a further refinement appeared through the creation of "diagnostic" and "remedial" tests, intended to reveal the aptitudes and the disabilities of each pupil and to provide a means of adjusting education to his needs.

All these measurements of achievement met with some degree of success, though before long some doubt was cast upon both their accuracy and their validity. Accuracy in the scales was predicated upon the assumption that differences in relative merit and quality could be determined by the consensus of an equal number of judges, and that units equally spaced could be set up on the scale by such averaging of judgments. It was, however, soon recognized that, while the estimates of different persons vary widely, it is by no means certain that they will always balance each other to the same extent when taken as a group. In the case of the tests, accuracy was disputed on the ground that a student's score on five, ten or fifteen questions did not give an adequate sample of his responses, especially since the value of the questions was largely conceived in terms of correlation between test results and teachers' marks and the material was often chosen because it was common to several text-books or generally used in collections of examination questions. As a whole, the formulation of scales and tests seemed in danger of perpetuating a *status quo* in educational practice. Efforts to standardize them were likely to become the means of producing uniformity, rather than a measuring-stick, and a fatal hindrance to any attempt to revise the curriculum.

Moreover, it became very questionable whether either scales or tests measured the really important products of education. Assuming that the results were reliable, could they be considered valid? It was

doubtful, for example, whether even the most accurate tests of ability to spell a given list of words, to read at a certain rate or comprehend fixed material, and to perform definite arithmetical operations or solve standard problems, could furnish any conception of the fundamental outcomes that should be expected in the development of pupils. It was gradually realized that the results of existing tests could by no means be regarded as an adequate indication of the effectiveness of an educational system.

Appreciating this principle to the full, educationists began some fifteen years ago to refine the tests and to re-shape them with a view to discovering how far pupils were attaining the real objectives of education. Since then validity has been sought as well as accuracy, and an effort has been made to frame tests that will measure not only skills and facts, but such desirable educational outcomes as various aspects of thinking and problem solving, and formation of study skills, work procedures and health habits. It would, therefore, seem reasonable to say that education has now come to be fairly successful in its endeavor to measure scientifically. Its procedures may not yet compare favorably with the finer work of centigrade thermometers, pier-supported scales, adjusted microtomes or high-grade anemometers, but they have at least passed well beyond the stage of rule of thumb, wampum exchange, or cartwheel measurement, and they promise before long to go a great deal further.

The development of such processes in measuring, moreover, is fairly typical of other scientific advances in education. The creation of technics adapted to its own investigations, which is an essential factor in the progress of every science, has been successfully undertaken in education. At first the subject copied the procedures of existing sciences, but, finding that methods suited to very different conditions would seldom yield conclusive results when applied to schools and pupils, it gradually modified these technics in such ways as would meet the new situation more satisfactorily. To this development a close material parallel may be seen in the transformation of the early automobile through the "horseless carriage," "gas buggy," snub-nosed "lizzie" and other stages into the present-day model of a sixteen-cylinder, stream-lined car.

A good illustration is found in the laboratory experimentation which began about a generation ago to be copied by workers in education. The essential factors to be investigated were, as in psychology, biology and physics, separated from the others accompanying them and examined in isolation. The technics employed were limited at first to studying the basic problems in learning and teaching, such as memory, practice, retention, fatigue and individual differences. These procedures, so effective in natural science, however, proved somewhat artificial in dealing with the data of intelligence and education. Accordingly, laboratory methods came to be expanded from a study of simple mental processes to those of the more complex nature actually utilized in life and school practice, such as judgment, discrimination and reason. Since such technics have begun to be developed, large contributions have been made toward scientific attitude and greatly improved practice in education.

IV

In numerous other directions the technics borrowed from the older sciences have been expanded and modified in the effort to place education upon a solid basis. There have, however, been some inherent obstacles in the way of education immediately becoming known as a science. In the first place, the very practical nature of the subject tempts its exponents to become administrators rather than investigators. If they undertake research at all, their work runs the risk

of becoming seriously diluted. An administrator can not easily be metamorphosed into a researcher. To him it is not a question of "what is true?" but rather "what is expedient?" The procedure and habits of the two attitudes are absolutely polar. It is the business of the research man to keep alert for new facts and never to settle questions, except tentatively. The administrator, on the other hand, must decide matters and finds his proper function in issuing a *fiat*, even if it afterward develops that his decision was wrong. He may upon occasion accomplish a modicum of research, provided he can keep himself in two pockets as it were, but an administrator *qua* administrator can no more be reckoned a research man than black can pass for white. Happily the educational scientist is more and more emerging from the shadow of administration and resisting the lure of "the world, the flesh, and the devil."

Somewhat akin to the temptation to succumb to administrative perquisites is the very strong urge of the educator toward premature publication. This generally leads to poor and ephemeral results. All young scientists are liable to be caught in such a trap, but the educationist especially is prone to heed the advice of Lady Macbeth: "If it were done, when 'tis done, then 'twere well it were done quickly." There are various causes underlying this undue haste for publicity. The relative newness of the educational worker's field and the social nature of his material, forever shifting and changing, is likely to lead him to break into print altogether too soon. He fears to delay and check his conclusions, lest he be accused of post-mortem diagnosis. Likewise the academic recognition and financial reward for having a pyramid of books and articles to his credit have proved the downfall of many a promising investigator. It is whispered that even college presidents have at times decided between candidates for a post by piling up their productions and selecting the one whose material overtopped. This undue emphasis upon fertility regardless of merit, however, is largely disappearing as equipment and facilities multiply and the field becomes more defined and settled.

Finally, the status of education as a science has suffered in the past through the pronounced opposition of many people to using the schools as laboratories and the pupils as clinical *cadavera*. This hostility has probably been engendered through a traditional and confused notion that all education deals with immortal souls and is therefore too sacred for experimentation. Such survivals of obscurantism are at length reaching the vanishing point, and educational officers and parents are now inclined to feel rather proud when their schools are selected for laboratory use. While the dear public and the legislators representing it occasionally interpose objections, this no longer obtains in the case of the schools themselves. The battle in behalf of educational investigation, though still contested, is obviously being won.

V

Such are some of the hurdles over which education has to pass before reaching its complete recognition as a science. It appears to be surmounting them and rapidly approaching the goal. It has made a good start toward measuring its processes and products scientifically. It has devised technics whereby educational situations may be brought under experimental control. A host of research men, emancipated from administrative ambitions and financial embarrassments, are now publishing results only after due deliberation and verification, and the schools are generally being used as scientific laboratories in education. Thus in many ways the subject is constantly formulating new procedures and developing higher standards.

There is a crying need for such research

to improve the material and methods used in education. An interest that involves the expenditure of three billion dollars each year, and, what is more important, concerns the welfare of thirty million boys and girls and through them the future of America, should not be subject to the hazards of guesswork and waste. Where the demand for scientific results is so great, the means for satisfying it must soon be found and due credit be given to those who conduct the search. The day can not be far distant when the work of men like Buckingham and Buswell, Courtis and Charters, Evenden and Freeman, Gates and Gray, Heck and Horn, Koos and Kelly, Judd and Monroe, Stoddard and Tyler, Terman and Thorndike, will bear its legitimate fruit. The influence of hundreds of young men who are each year turning their attention to research in education is bound to be cumulative and must everywhere come to be felt. Gradually men of genius are appearing, who not only afford us new methods of attack but fire our imagination with glowing visions of possibilities and progress. Judging from its present status, the future of education as a science would seem to be assured.

EDUCATIONAL EVENTS

EXPANSION OF FACILITIES AT THE WORCESTER POLYTECHNIC INSTITUTE

THE trustees of the Worcester Polytechnic Institute have recently authorized a $1,000,000 building program. However, expansion of the facilities at the college does not mean any increase in the restricted enrolment. The freshman class each year is limited to 180 students.

The first building to be erected will be a student activity center to cost $350,000, including a library and auditorium with a seating capacity of 975. Funds have been given the college as a memorial to a man prominent in the early development of the institute and his name will be given to the building at the time of its dedication. It will be erected on the west campus adjacent to Sanford Riley Hall, the freshman dormitory. Ground will be broken before commencement and the building should be completed by June, 1940.

The program also embraces an addition to Salisbury laboratories, now in construction, and remodeling of the old building, at a cost of $100,000; erection and equipment of a mechanical engineering building, $400,000; refitting the old mechanical engineering laboratories for the civil engineering department, $65,000; erection of a footbridge connecting the east and west campus, relocation of the tennis courts, development of a quadrangle on the west campus and remodeling of Boynton Hall for the use of the department of mathematics and construction of a faculty lounge, $85,000.

Plans for the mechanical engineering laboratory are being prepared and it is expected construction will be started within a year. Erection of this building has been made possible by bequests in the wills of Willard L. Ames, of New York, who was graduated in 1882, and Moses B. Kaven, of Worcester, who received his degree in 1885. Trustees and alumni propose to obtain additional funds for endowment and equipment. It is expected that the entire program will be completed by the opening of the fall semester in 1942.

DEVELOPMENTS IN ENGINEERING AT CORNELL UNIVERSITY

RAYMOND F. HOWES, assistant to the dean of the College of Engineering of Cornell University, writes to SCHOOL AND SOCIETY that the appointment of Dr. William Abbett Lewis, Jr., of the Westinghouse Electric and Manufacturing Company, as director of the School of Electrical Engineering at Cornell University, which took effect on February 1, completes the reorganization of the administrative staff of the College of Engineering, begun in November, 1937, with the appointment of Professor S. C. Hollister as dean. To succeed Dean Hollister as director of the School of Civil Engineering, Dr. W. Lindsay Malcolm, formerly lieutenant-colonel of Canadian Engineers, was secured from Queens University. Professor William N. Barnard, long head of the Department of Heat-Power Engineering at Cornell, was made director of the Sibley School of

Mechanical Engineering; and with the establishment of the School of Chemical Engineering on July 1, 1938, Dr. F. H. Rhodes, professor of industrial chemistry in charge of the former chemical engineering curriculum, became director.

During these fourteen months, in which the new school has been added to the college and new administrative officers selected for the other three schools, the curve of enrolment has started upward once more, numerous improvements have been made in facilities for instruction and research, and plans have been announced by President Edmund E. Day and the Board of Trustees for a $6,000,000 program to strengthen the college's resources by increasing endowment for instruction and research and constructing the first two units of a proposed new physical plant. A trustee committee, of which Bancroft Gherardi, retired vice-president and chief engineer of the American Telephone and Telegraph Company, is chairman, and the new provost, H. Wallace Peters, is executive secretary, is raising funds for the project.

While waiting for tangible results from this long-range program, the college is constantly improving existing facilities. During the last few months two floors of Sibley Dome have been entirely remodelled. With the Mechanical Engineering Library moved to the second floor, the first has been used to concentrate administrative offices, making available additional classroom space in East Sibley. Faculty offices have also been remodelled in the Mechanical Laboratory buildings, and changes and additions made in equipment. The material testing laboratory has a new 200,000 lb. tension-compression machine, and is installing two smaller machines. Regrouped on a new concrete floor are other machines for tension-compression, torsion, transverse bending, impact and various other standard tests.

New apparatus has also been added to the photo-elastic laboratory, and a constant-temperature room for heat-transfer tests, humidity control and various other types of research in air-conditioning and related fields, is under construction. A micromotion laboratory, with moving-picture cameras and projectors and other apparatus for time and motion studies of industrial operations, has recently been completed.

In the School of Civil Engineering, the sanitary and photo-elastic laboratories have had important additions to equipment, as has the material testing laboratory. A graduate students' shop for the construction of special apparatus needed for research and a new computing room have been completed. The School of Electrical Engineering has also added modern equipment for demonstration and research, especially in the field of high-voltage transmission.

Enthusiasm and activity among the alumni of the college, as well as an increase in the stipend of John McMullen regional scholarships to $400 per year, covering tuition, have had important effects on enrolment. The addition of twenty-nine McMullen regional scholars in the present freshman class brought the total to approximately one hundred. Demand for admission, especially in chemical and mechanical engineering, has been so great that the college has announced for next year a general policy of selective admissions. Cornell, long noted as a pioneer in engineering education, is undertaking a comprehensive and many-sided program to assure continued leadership in this field.

SELF-LIQUIDATING DORMITORIES FOR THE MASSACHUSETTS STATE COLLEGE

THE trustees of the Massachusetts State College have filed a bill which will authorize them to issue bonds in the amount of $500,000 to build self-liquidating dormitories at the college. *The Springfield Republican* reports that when the bill was heard recently by the legislative committee on agriculture it found numerous supporters and no opponents.

Dr. Hugh Baker, president of the college, told the committee that of 1,614 students now at the college only 340, or 21 per cent., are housed in the three dormitories. More than 800 live in private homes and others in fraternity or sorority houses. There are 350 undergraduate women housed outside.

The first need, according to Dr. Baker, is for a dormitory for women, to accommodate about 300 students. The plans for this call for a dining room in the basement. A dormitory for men students is also desired. Dr. Baker said that the rental to the students in the new dormitories would be about $3 a week or $120 for the term, which is as cheap or cheaper than they can live outside.

According to the plan as explained by Dr.

Baker, no state appropriation would be required, and in fifteen or eighteen years the rentals will have paid all interest on bonds and will have liquidated them. The buildings would then be turned over to the state, free of debt, and would be a source of income. The president said that other states have tried the plan and that it has always been successful.

SUPPORT OF STUDENTS BY THE NATIONAL YOUTH ADMINISTRATION

APPROXIMATELY 113,000 college and graduate students are receiving government checks this year, compared with about 100,000 last year, according to reports appearing in the daily press.

The increase followed a larger appropriation for the whole National Youth Administration program made by the Congress because of the decrease in jobs available for young people last spring and summer.

Each college or university applying for Federal aid for its students is allowed to put 9.3 per cent. of its total resident and graduate students between the ages of 16 and 24 on the NYA rolls.

While college students are permitted to receive an average of $15 a month and graduate students $30 a month, colleges have preferred to spread the money further and are giving undergraduates an average of $11.94 and graduates, $17.98.

NYA students are employed in such jobs as community service, clerical and office work, library, museum and laboratory assistance, special research, the conducting of forums, adult education classes and other civic activities, construction projects, maintenance of equipment, care of grounds and so forth. The employment in each instance is directly connected with the particular school or college.

Character and the ability to maintain a satisfactory scholastic record are taken into consideration as well as the element of need in selecting students to be aided. They are paid in government checks on the basis of time reports furnished by school officials.

All non-profit-making, tax-exempt educational institutions in operation in 1937 are eligible to participate in the NYA student aid program, but a number of institutions of higher learning, including Williams, Harvard, Wellesley and Smith, do not participate, preferring to use private funds for scholarships.

Yale has 407 students enrolled on the NYA, receiving $27,000 a month. Vassar has 111 students getting $14,985 a month and Bryn Mawr, 43 being paid $5,805.

Universities drawing the highest allotments at the present time are California, $247,995 a month; New York University, $166,050; Minnesota, $148,095; Ohio State, $149,175; Illinois, $144,045; Michigan, $117,720, and Wisconsin, $118,530.

The NYA high-school student aid program, in which nearly 25,000 high schools participate, has also been expanded this year. Students participating in the high-school program may not earn more than $6 each per month, to be used for carfare, clothes, lunches, etc.

In addition to the regular college allotment, a special fund of $100,000 was set aside this year to assist Negro college and graduate students residing in those states where there are limited advanced educational institutions for Negroes. This special fund is enabling 539 Negro students to earn an average monthly wage of $20.60. The majority of Negro students are graduate students.

PROPOSED FEDERAL AID FOR EDUCATION

UNDER the educational aid bill recently introduced in the House of Representatives by the chairman of the education committee, William H. Larrabee, the following appropriations would be made for the next six years:

For general educational advancement—1939–40, $40,000,000; 1940–41, $60,000,000; 1941–42, $80,000,000; 1942–43, $100,000,000; 1943–44, $120,000,000, and 1944–45, $140,000,000.

For teacher preparation—1939–40, $2,000,000; 1940–41, $4,000,000, and $6,000,000 for each of the succeeding four years.

For school building construction—1939–40, $20,000,000, and $30,000,000 for each of the succeeding five years.

For administration of state departments of education—1939–40, $1,000,000; 1940–41, $1,500,000, and $2,000,000 for each of the succeeding four years.

For adult education—1939–40, $5,000,000; 1940–41, $10,000,000, and $15,000,000 for each of the succeeding four years.

For rural library services—1939–40, $2,000,000; 1940–41, $4,000,000, and $6,000,000 for each of the succeeding four years.

For cooperative research and survey work—1939–40, $2,000,000, and $3,000,000 for each of the five succeeding years.

All the appropriations would cease after six years, but a special committee which the President would appoint under the bill would be required to make a report of future educational needs not later than January 15, 1944.

The allotment for New York State for rural library service and for adult education is computed to be as follows:

For rural library services—1939–40, $74,914; 1940–41, $149,828; 1941–42 and each of the three succeeding years, $224,742.

For adult education—1939–40, $549,274; 1940–41, $1,098,548; 1941–42 and each of the three succeeding years, $1,647,822.

A HIGH-SCHOOL BROADCASTING CLUB

FOR what may be the first time in the history of the airways, a group of high-school students will completely staff and manage a radio broadcasting station for a day when the Argentine High School of Kansas City, Kansas, under the faculty direction of K. C. Skeen, assumes the controls of local station KCKN on Saturday afternoon, February 25, from two to seven o'clock.

The special broadcast day is the culminating event in a series of 15-minute broadcasts which have been produced weekly for the past two years by the Argentine High School group. These programs have included instrumental and vocal music arrangements, student forum, sports casts, choral reading, special talent programs and student written dramatizations. Interested students form a radio broadcasting committee, write their dialogue and continuity, assist in directing and producing their own shows, devise sound effects and coordinate the musical and dramatic parts of each broadcast. Departmental programs are presented to suggest the work of the various school branches. Current topics dramatized by students include "Safety," "Life in a Democracy," "Public Health" and "Character Training." Programs for special days are accompanied by appropriate music and dramatization.

Thus, the students take over the management and actual program production of a radio station with a considerable background—and, needless to say, an abundance of enthusiasm. For that day, a senior boy with considerable training and interest in the field will be made general manager of the station; another, program director; others, news editor and commentator, sound effects man, music director and general sales manager (students will sell their own time and the money raised will be used for school purposes—the station donates the entire time).

The theme of the afternoon of broadcasting has been selected as "Airways and Folkways in the American High School," and the programs of the afternoon will aim to contribute to the understanding of radio as an instrument for education on all age levels.

J. C. Harmon, Argentine high-school principal, will open the day with the introduction of city and school officials, including F. L. Schlagle, superintendent of schools. Later in the day, students have invited three men of prominence in educational circles of Kansas to appear as honorary guests on the program and speak briefly on the professions, vocations and sports. The rest of the time will be filled by the boys and girls.

One mixed group is preparing a show entitled, "Corridor Echoes," to depict the social problems of high-school people as they are discussed in the school halls. Three girls are planning a children's quarter hour with music and a story. Six boys and two girls are clipping daily papers and cutting the stories into short news casts, practicing for the actual work. A music committee is preparing a dinner hour concert, and a sports committee is planning that section. The sales people have their campaign under way in the salesmanship classes. Commercial students form an office force.

Dr. K. C. Skeen, faculty adviser, says: "If a student has an interest or a talent, we have a job for him. It will be a real job to fit into his real life plans. We believe our broadcast day is unique in the high school and that it carries a great deal of practical merit in providing students with real experience."

TRAINING TEACHERS FOR INDUSTRIAL AND TECHNICAL HIGH SCHOOLS

THE problem of training teachers for the rapidly expanding technical and industrial high-school system of New York State is being seriously considered at Cornell University following the appointment last fall of Dr. Lynn A. Emerson as professor of industrial education. Five graduate students are engaged in research projects looking toward the formulation of a general program to help to supply the 2,500 additional teachers which state officials estimate will be needed in the next ten years.

Most of the work is at the graduate level, since prospective teachers must have the bachelor's degree plus three years of practical experience and special courses in education in order to qualify. Graduate engineers are especially in demand, according to Professor Emerson, since approximately half the available positions are in engineering or in related sciences, such as physics, chemistry and mathematics.

During the last four years Cornell has offered summer courses for graduates who desire to complete their requirements in education for teaching in technical and industrial high schools. Graduate work in this field during the regular winter session has been offered for the first time this year, coordinating facilities of the State College of Agriculture, the College of Engineering and the College of Arts and Sciences under the Graduate School of Education. Five assistantships have been created, and will be available annually to qualified graduate students.

The program is designed to train graduate students for teaching, administrative and supervisory positions in the state system; to advise undergraduates as to proper courses in the departments of education and rural education to be chosen as electives; and to coordinate the work at Cornell with that offered in extension evening courses by the State Department of Education in the larger cities in the state.

REORGANIZATION OF NON-TEACHING DEPARTMENTS IN THE BOSTON PUBLIC SCHOOLS

THE establishment of a "Bureau of Child Accounting" in the Boston school system to centralize and unify the activities of five non-teaching departments and to expand guidance and employment services, has been recommended to the Boston School Committee by the Board of Superintendents.

The two-fold objective of the proposed bureau, as reported in the Boston *Herald*, would be "the collection and collating of data which would have a direct bearing upon the school curricula and upon the guidance given pupils," and the presentation to the public of "accurate and timely information as to the status of the school system, its modern aims and improvements and its outstanding achievements."

The divisions to be affected are the department of attendance, the certificating office, the department of educational investigation and measurement, the department of vocational guidance and the division of employment.

As long ago as 1927 the superintendent of schools suggested, and the Board of Superintendents recommended, a survey of records in the certificating office in an effort to determine the reason for children leaving school, how they obtain employment, what aids or hinders their advancement and whether there is offered in the schools sufficient training in fields where there are employment opportunities. Such a survey, it is claimed, would form an intelligent basis for curricula planning.

THE SELECTION OF ASSISTANT SUPERINTENDENTS FOR THE NEW YORK CITY SCHOOLS

THE New York City Board of School Superintendents has selected candidates—two women and three men—from a field of seventy-five applicants, to fill the five vacancies in the assistant superintendents division. The positions, carrying tenure, pay $10,000 annually.

The New York Times reports that this is the first time in the history of the school system that so many assistant superintendents have been chosen at one time. All the nominees are elementary or junior high-school principals. The names will be submitted for approval to the Board of Education.

Those nominated are: Miss Minnie Obermeier, principal of the Andrew S. Draper Junior High School; Miss A. Eugenie Chinnock, principal of the Harriet Beecher Stowe Junior

High School; Rufus M. Hartill, principal of Public School 5; C. Frederick Pertsch, principal of the John M. Harrigan Junior High School, Brooklyn, and Thomas H. Hughes, principal of the Crescent Junior High School, the Bronx.

The two women nominees are intended to take places left vacant by the death of Assistant Superintendent Margaret P. Rae and the promotion to the Board of Superintendents of Miss Regina C. M. Burke.

The three men will fill positions formerly held by John K. Bolen and William Rabenort, who died last September, and Frederick L. Holtz, who retired.

Before the candidates are officially approved, they will be voted upon by the Board of Education. It is said that a conflict may develop here, as at the time of the last election of associate superintendents one member of the board, Dr. Alberto Bonaschi, expressed strong disapproval of the way high administrative posts of the school system were filled. He urged that the entire country be canvassed to get the best available material for these positions.

EDUCATIONAL NOTES AND NEWS

THE DUKE OF DEVONSHIRE has been installed as the third chancellor of the University of Leeds, succeeding his father, the late duke.

DEAN HENRY S. GRAVES, of the Yale School of Forestry, provost of the university from 1923 to 1927 and a member of the faculty for thirty-one years, will retire from active service at the end of the college year. He will be succeeded as dean of the school by Dr. Samuel J. Record, professor of forest products and internationally known as a wood anatomist.

DR. ROBERT G. CALDWELL, United States minister to Bolivia and formerly minister to Portugal, has been appointed dean of humanities at the Massachusetts Institute of Technology, effective next September. From 1914 to 1933 Dr. Caldwell was at the Rice Institute in Texas, where he was professor of American history and dean of the institute. Assisted by a faculty committee he will have charge of the departments of English, history and modern languages, as well as some parts of economics and social science.

DR. P. ROY BRAMMELL, associate professor of education at Connecticut State College, has been promoted to be head of the department of education and dean of the division of teacher training. He succeeds Charles Burt Gentry, who has recently been made director of the summer session and university extension work. Professor Gentry will continue as director of resident instruction.

ROBERT D. FEILD, assistant professor of fine arts at Harvard University, described by the *Crimson* as "admittedly the most popular teacher in the department," has been denied reappointment. It is reported that his active teaching will continue until September, when he will be given a year's leave of absence, terminating his connection with the university.

DR. HENRY E. SIGERIST, William H. Welch professor and director of the Institute of the History of Medicine at the Johns Hopkins University, has been appointed to the South African visiting lectureship for 1939. He will speak at the chief universities of the Union throughout August, September and October and will gather material there and in Egypt for his four-volume history of medicine. He will return in December.

DR. DONALD A. LAIRD, for many years head of the department of psychology at Colgate University, has been appointed head of a new foundation for consumer analysis established by N. W. Ayer and Son, an advertising agency in Philadelphia.

THE REV. DR. MATTHEW J. FITZSIMONS, S.J., was recently appointed regional director of higher education of the National Jesuit Educational Association. The association comprises seven regional provinces, and Father Fitzsimons will be director of the Association for Jesuit Colleges in the Middle Atlantic States. He succeeds the Rev. Edward B. Rooney, S.J., of New York, who was appointed last year executive secretary of the association. For the past seven years, Father Fitzsimons has been dean of studies at St. Andrew-on-Hudson, Poughkeepsie, N. Y., the House of Studies of the Jesuit Order.

PRESIDENT LEVERING TYSON, of Muhlenberg College, was elected a member of the educational board of the National Lutheran Synod at the recent biennial convention in Baltimore of the United Lutheran Church in America.

DR. LAURENCE H. MACDANIELS, professor of pomology at Cornell University, has been elected chairman, and Dr. Dwight Sanderson, professor of rural social organization in the New York State College of Agriculture, vice-chairman, of the Ithaca Council of Social Agencies.

MAURICE SMITH, first assistant librarian at Cooper Union, has been appointed acting librarian to succeed John H. Moriarty, who had resigned to become an assistant to the director of libraries at Columbia University. David K. Maxfield has been named an assistant librarian of Cooper Union.

DR. ROBERT K. LAMB, assistant professor of economics at Williams College, is on leave of absence for the current academic year. He has been made member of a committee which is investigating the "civil liberties situation" in San Francisco, and has given up his original plan of making an economic and political survey of a midwestern city.

DR. KARL EINSTEIN, formerly professor of political economy at the University of Madrid and later a captain of infantry in the Loyalist Army, is reported to be in a French concentration camp for soldiers of the Spanish Government. He planned to go to Paris, where he hoped to exchange his passport for a Nansen Refugee Committee pass, so that he might be able to join Dr. Albert Einstein, his uncle, at Princeton.

THE Conference of Supervisory Groups, made up of associations of school supervisors in the City of New York, has elected Dr. Frank J. Arnold as chairman of the conference for the year 1939. Dr. Arnold is president of the Association of First Assistants and head of the Haaren High School annex.

IT has been decided that the memorial in honor of Dr. Walter Dill Scott, retiring president of Northwestern University, shall take the form of a building to be called Scott Hall to serve as a students union building and community hall. It will be erected at a cost of $750,000, including an endowment for maintenance, which it is proposed to raise by public subscription. The hall will be three stories in height with a four-story tower and will harmonize architecturally with the other quadrangle buildings.

DR. EUGENE A. COLLIGAN, who is now entering his fifth year as president of Hunter College, was the guest of honor at the annual breakfast of alumnae on February 12. The breakfast also marked the sixty-ninth birthday of Hunter College, which fell on February 14. Dr. Frank P. Graves, State Commissioner of Education, outlined Dr. Colligan's twenty-five years of service in education in New York City and especially praised his work as president of Hunter in the face of the difficulties involved in such an office. Tributes also were expressed by Thomas J. Mangan, chancellor of the University of the State of New York; Dr. Harold G. Campbell, city superintendent of schools; James T. Hallinan, Justice of the New York Supreme Court; Albert Cohn, Justice of the Appellate Division of the New York Supreme Court, and Professor Joseph Cummings Chase, of Hunter College.

DR. EDUARD BENES, formerly president of Czecho-Slovakia, now visiting professor at the University of Chicago, was the guest of honor on February 12 at a dinner at the Knickerbocker Club given by Hamilton Fish Armstrong, editor of *Foreign Affairs*. Those expected to be present included: Supreme Court Justice Felix Frankfurter; Assistant Secretary of State George S. Messersmith; Jan Masaryk, formerly Czecho-Slovak Minister to Great Britain; Harold W. Dodds, president of Princeton University; Isaiah Bowman, president of the Johns Hopkins University; Dr. Alvin Johnson, director of the New School for Social Research, and a group of authors and editors.

DR. JESSE HAINES HOLMES, emeritus professor of philosophy of Swarthmore College, celebrated his seventy-fifth birthday on February 10. He was the guest of honor at a dinner sponsored by the Philadelphia Labor Seminar at 1425 Chestnut Street. Dr. Holmes, who has twice run for Governor on the Socialist ticket, is director of schools for the Labor Seminar.

A BUREAU of Instructional Research has recently been established at the University of Nebraska, with J. P. Guilford, professor of psy-

chology, as director. Professor Guilford will continue to devote part of his time to teaching. H. W. Cox, of the University of Georgia, has been appointed to full-time work in the bureau.

THE tenth Annual School Administrators Conference, to discuss "Current Programs and Objectives of Public Education in the South," will meet at George Peabody College for Teachers at Nashville, Tenn., on June 15, 16 and 17.

A SPECIAL program of courses in Higher Education will be offered by the University of Pennsylvania Summer School during its 1939 session. President Raymond A. Kent, of the University of Louisville, will offer two courses in "Principles and Practices of Higher Education," and R. D. Matthews, assistant professor of education, University of Pennsylvania, will offer a course in "Personnel Administration in Higher Education." The summer session will be held from June 26 to August 8.

MISS GERTRUDE WARREN, of the U. S. Department of Agriculture, is the recipient of the highest civic award of Latvia, the Order of Three Stars, for "valuable service rendered in fostering friendly relations between Latvia and the United States, particularly in the field of 4-H Club work."

RALPH SHAW, librarian of the Gary, Ind., Public Library, has received the distinguished service award of the United States Junior Chamber of Commerce for 1938.

A RECEPTION was given at the British Institute, Paris, on February 3, in honor of Lord De La Warr, president of the British Board of Education, who was visiting Paris as the guest of M. Jean Zay, the French Minister of Education.

REAR ADMIRAL RALPH EARLE, U.S.N., retired, since 1925 president of the Worcester Polytechnic Institute, died suddenly on February 13. He was sixty-four years old.

THE REVEREND PETER J. CUSICK, from 1924 to 1930 president of Canisius College, Buffalo, N. Y., died on February 7, at the age of sixty-three years.

DR. RAYMOND A. PEARSON, from 1926 to 1935 president of the University of Maryland, died on February 13 in his sixty-sixth year. He had been assistant chief of the dairy division of the Department of Agriculture, professor of dairy industry at the College of Agriculture at Cornell, Commissioner of Agriculture for the State of New York and president of the Iowa State College of Agriculture and Mechanic Arts. He remained there until 1926, when he became president of the University of Maryland. Since his resignation in 1935 he was special assistant to the administrator of the United States Farm Security Administration.

DR. REGIS MICHAUD, professor of Romance languages at the University of Illinois, died on February 7. He was fifty-eight years old.

WILLIAM A. MACKEY, for forty-one years a school teacher and principal in Buffalo, N. Y., died on February 5 at the age of seventy. For three years he held the post of supervisor of research and efficiency.

THE REVEREND BENJAMIN BRAWLEY, a leading Negro scholar and professor of English at Howard University since 1931, died recently at the age of fifty-seven years.

T. MERRILL AUSTIN, for thirty-two years professor of music and director of the conservatory of music at Monmouth College, Monmouth, Ill., died on February 5. He was seventy-six years old.

THE REVEREND JOSEPH GREGOIRE BASTIEN, formerly Superior of the Canadian College at Rome, died on February 7 in his seventy-fifth year. Before becoming head of the college in Rome he had been Superior of Philosophy at the Seminary of Montreal.

DR. EDUARD BENES, formerly president of Czecho-Slovakia, will be the Charter Day speaker at the University of California. He will speak at Los Angeles on March 20, and at Berkeley on March 23.

GEORGE FINGER THOMAS, professor of philosophy at the University of North Carolina, delivered a series of lectures at Smith College from February 6 to 9. On February 6, Dr. Heinrich Bruening, formerly chancellor of the German republic, spoke there on "The German Constitutional Crisis of 1933."

DR. WILLIAM F. OGBURN, professor of sociology at the University of Chicago, will be the

leader at the fourth annual Summer Educational Conference at the Central Washington College of Education, Ellensburg, to be held on June 14, 15 and 16. The theme of the conference is "Contemporary Social Problems."

THE Pontiac motor division of the General Motors is cooperating with the American Automobile Association and school supervisors in furthering student driver training. Thirty-five new Pontiacs with special finish, appropriate lettering and dual control equipment are being assigned by the American Automobile Association to schools where they will be used for instruction in safe driving. At the close of the regular high-school term the cars are assigned to colleges and universities for use in the summer schools.

AT a meeting of the British Society for the Protection of Science and Learning, held on February 6 at University College, a national appeal was made for funds for the work being done on behalf of academic refugees. The speakers included Sir Samuel Hoare, Lord Reading and Sir Peter Chalmers Mitchell.

IT is proposed to offer four Hanseatic Scholarships, each of the value of 3,000 Reichsmark, for the academical year 1939–40. They may be held in any subject and will be open to unmarried British subjects under the age of 25 years on June 1, 1939, who are either graduates of a university of England, Scotland, Wales, Ireland or graduates of a British Dominion university studying at the time of application at a university in the British Isles, or undergraduates of a British university who are intending to graduate in the academic year 1939–40. The scholarships will be tenable at the University of Hamburg, but in exceptional cases provision can be made for a scholar whose special work points to some other academic center in Germany. There will be no examination, but candidates may be required to come to an interview in London at their own expense.

THE decrease in enrolment in the German universities is shown by a report on Bavarian institutions summarized in the *Journal* of the American Medical Association. Students admitted to the first semester numbered 2,957 in the summer semester of 1931, but in the winter semester of 1937–38 the number was only 940. In the winter of 1913–14 a total of 9,340 students were matriculated; the number was 13,819 in the winter of 1932–33 and only 6,825 in the winter of 1937–38 and 6,092 in the summer of 1938. The enrolment in the past year was far below that of pre-war times. Moreover, the number of medical students has dropped from 593 in 1928 to 240 in the summer of 1938. To counteract this dearth of younger professional men an abbreviation of the time spent in study was proposed. A decree of the national minister of the interior has already reduced the medical course by about one semester; the entire course now covers ten half-year periods instead of eleven.

AN Associated Press Dispatch from Shanghai, dated February 7, states that American missionaries in Soochow, fifty miles west of Shanghai, reported that the Soochow Japanese-administered government had written the American church schools stating that "unless the schools are reopened we are likely to occupy the property." As a result the American Consulate general is issuing proclamations and seals, which are being placed on the Soochow properties, stating that they are American and that trespassing is forbidden. The missionaries contend that the war prevents reopening of the schools; "the Japanese would have us teach the Japanese language to the Chinese, use Japanese text-books and otherwise assist in their aggression in China."

CECIL NORTHCOTT, Home Secretary, London Missionary Society, writes to the London *Times* in regard to the destruction of "middle" (secondary) schools in China. "The London Missionary Society, for instance, has suffered grievous loss through the shelling of its Medhurst Colleges for Boys and Girls now in the 'No Man's Land' north of Soochow Creek in Shanghai. Here were fine buildings and modern equipment for 800 Chinese pupils of middle-class parents, and the loss can not be less than £20,000. But the unbroken spirit of China is shown in the way staff and pupils have started the schools again in other parts of the city. Over 200 boys are now on the roll and most of the classes are being held in a disused garage, and the Girls' School has reopened with 80 pupils."

SHORTER ARTICLES AND DISCUSSION

THE "LOVE OF STRENUOUS ACTIVITY AMONG COLLEGE WOMEN" MYTH

DURING the recent depression physical education programs were curtailed on a wholesale scale. Many of the profession resented this seeming misfortune. Not only was it hard to bear the ignominy of having the profession considered a fad, but to realize that efforts to make the public physical-education-conscious had failed, was even more difficult. Yet, in fairness to this move it must be admitted that those administrators who eliminated physical education were not altogether unjustified in their action. Nor should there be any professional disloyalty inferred from this admission. For years, much less had been accomplished than should have been.

The inability of teachers to make physical education indispensable to the college curriculum was not altogether due to lack of hard work on their part. They worked hard, but may have been striving for the unattainable. It would have been more sensible to keep their efforts within range of human realization. Heretical as it sounds, a slogan such as that of the Women's Division of the National Amateur Athletic Federation ought to be repudiated unless it can result in more than a "theme song." The slogan to which the author refers is the well-known "A Sport for Every Girl and Every Girl in a Sport," to which so many teachers continue to pay lip-tribute. Perhaps the formulators intended it to be used simply as editorial canard or propaganda for their office. Teachers, however, accepted it *in toto,* as they are wont to do with much of the fine-sounding phraseology of education, regardless of its implications. Their acceptance was sincere, but sincerity without intelligence availeth little.

The task of finding a "sport for every girl" was fairly simple. New ones are invented monthly. As to the rest of the slogan, teachers of physical education may as well admit partial, if not complete failure. For even with the cooperation of the entire staff and the dean of women's office it is impossible to interest *every* girl in a sport. There is less likelihood of accomplishing such a scheme than of bridging the Atlantic Ocean. Compulsory measures do produce results, but not the kind that educators want.

There must be some basic reason why physical education appeals to none but a minority of women in college. Various explanations have been given. Some teachers attribute such disinterest on the part of students to a personal dislike, and are content to let the matter rest at that. Others state apologetically, "They are so young they simply do not know what is good for them." Neither explanation presents a thorough analysis of the problem. Such a *laissez-faire* attitude might be excusable were the antipathy of the student toward physical education an affair of the moment. Since it happens at least 50 per cent. of the time, it is little short of stupid to ignore such reactions completely.

There are indications on every hand that student opinion should be regarded as one of the most valid criteria in planning our work. The American Youth Commission has, as recently as this July, pointed out the necessity of incorporating democratic practices in our teaching. Of the 551 institutions covered in its survey "one fourth of the colleges do not bring defects discovered to the attention of the students, while but 67 institutions stated definitely that the students are given an opportunity to discuss the outcome of the examination with physicians."[1] We read such idealistic points of view but do nothing about them.

The exact moment when the manifestation of cosmic wisdom accrues to school authorities is not known, nor when the transition from an "ignorant" student to an erudite teacher takes place. There must be some such occasion, however, although the secret has apparently been guarded most carefully. Otherwise how can one account for the fact that, until a student has earned her diploma, her judgment received small consideration. Yet immediately thereafter, provided she enters the teaching profession, she is regarded by many as a savant, possessed of infallible wisdom. Where or how did this metamorphosis come about?

In spite of evidence to the contrary, teachers continue to evade the practice of adopting more

[1] American Youth Commission Bulletin, 3: 1, 1, July, 1938.

democratic procedures in planning programs for students. It is to be hoped sincerely that they will soon relax their resistance to progress and recognize the advantage of utilizing student interest. Had less of logic and more of common sense been used in the curriculum making, many of our so-called "problems" would have been eliminated long since. Until the myth of the sovereignty of *teaching* has been discredited, progress will be slow.

Most of our present programs of sports and dancing have come to us by direct inheritance. Yet to-day, teachers teach as though they were compelled to do as the last generation was accustomed to do. Since many of those in the field now are not responsible for the *status quo,* it would be no disgrace to admit that perhaps they had made a poor start. To acknowledge previous errors and start afresh, would be to show signs of greater intelligence.

Physical educators should be the ones to explain the mysteries of the following behavior, so characteristic of many college women. Why, when a girl is supplied with tennis racket and balls, has two hours free with no other pressing engagements on a beautiful spring morning, with no greater effort required of her than to walk to an elevator, be carried down to the ground floor, then to take a short walk to a well-kept tennis court, does she prefer any one of ten other things? Why do less than 50 per cent. of the women enrolled in college fail to elect physical education when they are not compelled to do so? We reiterate that such behavior is not an exception—it appears typical of the adolescent woman.

There must be some adequate explanation for it. Unfortunately, the obvious is often the most elusive. Theorists of physical education lecture repeatedly that these activities are *natural,* but their theories are of small help in solving our difficulties. When we test said theories by practice they can not cover all dimensions of the situation.

Soccer is one of the activities alleged by them to be *natural.* In attempting to obtain some measure of its naturalness, it seems most unnatural. From a college population of 450 women students, it is not unusual for seven or fewer students to relinquish other duties to practice for an interclass game. Facts such as this strongly refute any arguments hinting that the solution of our problem rests with the substitution of natural activities for the more formalized. Theory and practice need to be revised if physical education is to retain its vantage point even in required classes. Student disinterest in the conventional programs remains constant in spite of any and all changes in nomenclature.

Conscientious individuals offer some explanation for this "revolt of modern youth." They have even attempted lengthy investigations to locate possible causes. Among those suggested, were lack of time, lack of skill and the expense of certain of the activities. The National Recreation Association,[2] after studying the leisure hours of 5,000 people, offered the explanation that adults fail to indulge more frequently in physical education because the facilities are so inaccessible. Yet we know that attendance records continue to strike new lows even when the facilities of the college are optimum. Girls refuse to spend their spare time in our department. Not even the inducement of trips with members of teams to other institutions arouses their enthusiasm.

In fairness to the effort expended in such studies as that of the National Recreation Association, they seem valuable only as points of departure for further investigation. In most cases the authors were so thoroughly imbued with a false notion of loyalty to the profession that their findings seem to lack objectivity. Data which seemed not to flatter their professional ego were passed over lightly or completely ignored. In this way the authors incurred no professional wrath nor would they be considered heretics. Rather than admit defeat they continued to protect their professional consciences by allowing to be published only that which would seem complimentary. The less flattering results were reserved for the sympathetic fellows in the seminar.

Among themselves they admit that no amount of outside work restrains the college woman from engaging in that which she especially desires to do. Furthermore, with the possible exceptions of golf and horseback riding, the expenses of physical education are negligible com-

[2] "Leisure Hours of 5,000 People," National Recreation Association, 1935.

pared with those of owning a radio or purchasing dance frocks, both of which are indispensable to the modern girl.

She can afford the last-named, but not the first. These facts should be scrutinized for their implications. If they be true, they may be taken as significant leads in program-making. This information might become a fulcrate point from which to initiate subsequent investigations.

Teachers have spent as much as ten years trying to produce what might be described as a well-attended leisure-time program among their particular group. The word *tried* is emphasized, for they felt that to speak with greater certainty would be to avoid truth. Attendance in the required classes at these same institutions always maintained a very high average—probably well above 95 per cent. Some might interpret this figure as indicative of enthusiasm on the part of the students. The explanation that this high record of attendance was maintained only under duress—an excuse for the registrar or a demerit from her—disproves any such notion. Interest and coercion seldom coexist. As a matter of actual fact, there was probably very little spontaneous interest in these classes. The industry of the group was based upon the knowledge that the scholarship fees for the following year were meted out in proportion to the grades received during the current year.

Die-hards continue to assure us that with such marked industry in prescribed courses there is bound to be a certain amount of carry-over to the extra-curricular program. Those idealists are doomed to disappointment. The activity born of compulsion is never a criterion of interest. Students who spent any of their leisure time in physical activity, after having satisfied the requirements of the registrar of the institution mentioned above, numbered less than 4 per cent. of the student body. Even those majoring in physical education, whom one would expect to be vitally interested since it is their chosen field, spent no more time than the rest.

The reason which best seems to account for this universal antipathy of adolescents toward strenuous activity seems to be of a psycho-social nature. The enthusiasm which young children manifest is apparent. Their seemingly insatiable desire for play serves the necessary function of assisting in the organic and other development, but at adolescence this characteristic changes markedly.

The truth of this statement is borne out in practice. This indifference of the adolescent toward her physical education becomes more than a product of the imagination of those who have worked with or studied them. It may actually be the external manifestation of the internal drives essential to the development of the young adolescent.

The authors of the hypothesis that interest in big-muscle activity would continue indefinitely throughout life had apparently failed to note that it tapers off with increased chronological age. Whereas, their explanation covers adequately the behavior of children, it is valueless when applied to more mature persons. The latter are not primarily interested in exercise. So why should not a hypothesis to the effect that those very processes which had been fundamental in assisting growth become obsolescent, once maturity has become established. Also, that "activity for the sake of activity" which predominates child life, begins to decline then, being ultimately superseded at puberty by other more specific drives? The theory of perpetual interest in strenuous activity is incongruous with this hypothesis.

Studies of the activities in which adolescents allege they engage, supply us with facts which contradict the "lifetime theory." Dimock's[3] data derived from a study of adolescent youths revealed that a very definite retardation in the number of activities occurs as chronological age progresses. Furthermore, as children grow older, they steadily resist programs which tend to impose upon them an increasing number of physical education activities. Instead of accepting these hierarchies of educational procedure, as they mature, their successful concentration upon enterprises which culminate in the establishment of a home and economic security, renders our efforts futile. George Soule,[4] a wholly disinterested observer, regards as infantile, the tendency that a portion of our adult society seems able to derive pleasure from naught but games and play. "Though we know these pursuits are artifices, the fact that we are conscious

[3] Hedley V. Dimock, "Rediscovering the Adolescent," Association Press, 1937.

[4] George Soule, "A Planned Society," p. 1, Macmillan, 1932.

we are playing at them, fails to satisfy us for long . . . we need a relationship to something which commands ultimate emotional loyalty."

Why continue to deceive ourselves? If none but the theory of individual differences was applied to the problem, we would have sufficient proof that there would always be a few who would evince no interest in physical education. There are innumerable gradations from this condition, to those who ask no more of life than to be allowed to play. It would be more rational for those who are responsible for maintaining a program of physical education in the college to accept these facts and plan their programs accordingly.

The departments of literature and fine arts are not expected to engage the attention of the entire college population. Students who elect these courses rarely exceed a minority in the college group. Staff members in these departments feel no obligation, as the physical educators seem to do, to pad reports to the administrators in order to indicate a large enrolment. Nor do they feel the necessity of inventing all manner of schemes to intrigue students. Imagine a "Dramatic Play Day" or a traveling art team, if you will. Ridiculous as the suggestion appears, one can readily conceive that with a fanfare equal to that used by the physical education department, such nonsense might easily become another phase of educational procedure.

If it be true that we have made a faulty approach in developing college programs, what can be done about it? Shall all physical education be abolished from the curriculum and these teachers placed in the elementary school where one is positive they will be received enthusiastically? By no means! The modern adolescent, leading a strictly intellectual life, completely surrounded by mechanical gadgets, appears far more in need of a program of physical education than did her grandmother seventy-five years ago. In a preliminary report to the American Youth Commission on the "Health of College Students," Drs. Diehl and Shepard state: "The complete college health program should consist of four basic factors: a student health service for individuals, a campus public health service for the student body, classroom instruction in health matters and *physical education as a health activity* [italics ours] and for the correction of deficiencies."[5]

Few laymen would question the judgment of most physicians. If the latter prove that an extended period of physical education throughout college is essential to health, we teachers will be in accord with them. We must do more than to continue in the same old rut, however. We must modify and remodify our plans in order to really accomplish what physicians tell us is a basic necessity.

We must avoid the errors of our predecessors at all costs! At this point a hint from the method of approach of the educators who deal solely with the adult groups might not be amiss. We refer to their general methods only, for physical education is conspicuously absent from most of their curricula. Instruction is confined merely to the areas in which students have expressed a desire to learn and their attendance remains constant.

Furthermore, we note that adult education curricula are not cluttered with obsolete courses of study. Perhaps they haven't had time as yet to accumulate them. Surely the two groups of students—adult education and college—have sufficient in common to draw a parallel between the methods used in dealing with them.

We dare not repeat our mistakes, however great the temptation. This being the case, a sensible point of departure would be to avoid prescription of specific activities for the modern woman in college. Instead we should designate a need for it and keep our requirements within range of their interests, relying upon their intelligence to see the way. In other words, it is they who should now do the prescribing, while we as teachers merely try to fill their prescription.

The time has arrived when college teachers of physical education must do more than wishful meditation about their problem. It seems neither prudent nor intelligent to continue to follow the whims and fancies of the *modernists*. For they have done little more than offer the same product under a different name. The primary task of all who deal with young women who have passed the menarche is to recognize that interest has waned in activities that are essentially strenuous or highly competitive. These women in-

[5] *American Youth Commission Bulletin, op. cit.*, p. 1.

form us frankly that the older they become the less they enjoy physical education, with the possible exception of non-competitive activities. If they are interested only in walking, camping, bicycling, swimming and tennis, why not follow their suggestions? The fundamental and essential predicate for all learning is *interest*.

MARY C. BAKER

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CHILDREN AT THE TYPEWRITER

IN a downtown street of a Western city, not long ago, traffic was blocked for days when the board of education found it necessary to locate a group of first graders, temporarily, in a storeroom with a plate-glass front. What held the crowd spellbound was a roomful of little tots happily doing their school work *on typewriters*.

If the crowd had known the story back of what they were seeing, its interest would have been even more intense. For these youngsters were among the 14,000 involved in an experiment which had been quietly carried on for the past few years by two of the nation's ranking psychologists, Drs. Ben D. Wood of Columbia and Frank Freeman of Chicago. The experiment has led to this interesting educational discovery: old-fashioned methods of teaching your child to write longhand first are unnecessary and may actually retard his rate of school achievement.

The full significance of this simple announcement may escape you unless you think it over. Why do you hate to write letters and put them off as long as you can? Why do you so often hear, "I don't see why John doesn't write more often. When children leave home nowadays they forget all about Dad and Mother. When they write at all, it's only a scribble on a postcard." Why does a child learning to write screw his face into the most grotesque expressions of physical pain? The answer is that the process of putting thoughts down on paper calls for an actually arduous coordination, which is difficult for the child to acquire and which leaves us, even as adults, a subconscious distaste for writing.

A few years ago Drs. Freeman and Wood decided to investigate various statements, made both by educators and business men, about how greatly the typewriter helped children in learning. Being scientists, they felt that these statements, if true, should be backed by scientific experiment, and if false should be proved to be so. The four leading manufacturers of portable typewriters agreed to furnish the necessary money—several hundred thousand dollars—and to loan 2,100 portable typewriters, to settle the matter once and for all.

The typewriters were distributed to 30 schools in eight cities, widely separated, in order to secure an accurate cross section of American school children. In each city, some schools were selected as Experimental Schools, where typewriters were used, and Control Schools, where they were not used. The experiment lasted two years, and a third year was consumed working up the results. Children from five to twelve were involved. The Experimental and Control groups were matched as evenly as possible in age, ability, class standing, home backgrounds, and given teachers of equal qualifications. The sole idea was to arrange two groups that would differ in only one respect—one would use typewriters and the other would not.

The children taught themselves to typewrite by the hunt and peck method. In one city the objection was raised that this would be a drawback in learning touch typewriting later on. But a special experiment disclosed that pupils who had had one year of typing by the hunt and peck method learned touch typing much more rapidly than pupils of the same age and grade who had never used the typewriter. Significantly enough, while the Control children showed no eager enthusiasm for their writing lessons, the typewriter children clamored for their turn at the machines.

The teachers were instructed to save all the written work—both handwritten and typewritten —*except in arithmetic*. Any fool would know that the typewriter could not help children in arithmetic. But this was just where everybody was fooled. It was soon found that the children, without being told, were doing their arithmetic problems on the machines. So, from then on, all their number work was saved; and it was found in the end that the improvement in arithmetic was in many classrooms greater than in any other subject—in some cases as much as 30 per cent.

The written work saved by the teachers would almost fill a house. Over half a million written pieces came from only four of the cities. There is still a carload in a big storage room in New York City from which only samples have been

examined. "It would probably cost a million dollars," Dr. Wood added, "to find all the educational lessons contained in that pile of material, but it would be worth it." Several psychologists are still at work refining and applying the results so far obtained, and Dr. Ralph Haeffner, field director of the original experiment, has worked out two fine little books of instructions, beautifully illustrated with pictures, so that parents and teachers can carry on similar experiments with their children.

Tests at the end of the first year showed the average percentages of gains of the Experimental children over the Control children to be roughly as follows: Reading 9; literature 14; geography 19; spelling 23; language usage 38; arithmetic computation 31.

But the cold figures tell little. The first question always asked is, "Doesn't this method injure the penmanship of the children, and cause them to dislike writing by hand?" The answer is a resounding "No." The typewriter children not only wrote fully as well, but liked to write by hand much better than did the children taught only by the hand method!

This is truly astounding. And, at this point, let us hear Dr. Wood himself tell us the general conclusions from the experiment. "I think," said Dr. Wood, "there were two results even more important than the improvement in the mastery of school subjects: first, the release and stimulus which the ease of writing on the machine gave to the child's powers of expression; and, second, the improved attitudes toward school work in general."

During the first year the Experimental children in grade one averaged a total of 3,000 written words per pupil, of which nearly 1,500 words were handwritten, whereas the exclusive handwriting children averaged less than 500 words per pupil. In grade two the Experimental children averaged 5,500 words, whereas the Control children averaged only 2,500 words. This suggests that a lot of the penmanship practice we impose on children under 10 or 12 years of age probably does no good. It may be that we teach them handwriting before their muscles and nerves are mature enough to make the complex coordinations that are necessary. Of course we have to teach them the beginning of writing, but we may be carrying the amount of forced practice much too far. At least it indicates we do not yet know the best way, or even the best time to teach children handwriting.

Both directors of the experiment feel, however, that the high point of the whole inquiry was the extraordinary amount of voluntary writing done by the Experimental children. They wrote many times as much *original creative composition,* such as stories, poems and letters, as did the Control children. One class made up a whole book of original problems in arithmetic! This increased tendency of the children to write out their own thoughts, due partly to the ease of writing them, is the crucial evidence of the benefit of the typewriter in the education of children.

All this makes us realize in a new way the suffering we put children through in learning to write with pencil and pen—actual mental and physical suffering. Just consider the ordeal a little tot has to go through in learning to write the word "good." He begins by copying from a model. First he laboriously forms the upper part of the "g." He is gripping his pencil for dear life, sitting in an awkward position, straining his eyes, and most of his muscles down to his toes are taut with eagerness to do it right. By the time, however, he has the upper part of the "g" formed, he has forgotten how the rest of it looks, and has to look back on his copybook for the model. Again, when he gets the entire "g" formed he has forgotten the rest of the word. If he wants to write the phrase, "Good-day, Mr. Rabbit," by the time he has written "Good-day," the "Mr. Rabbit" has vanished in the distance—actually vanished from his thoughts.

You see the process of coordinating all the muscles and getting the letters correctly formed is so absorbing that the child forgets the thoughts he started to write. The thought itself is one mental hurdle and the problem of writing correctly is both a nervous and muscular hurdle; so he has to negotiate two or three hurdles at once. And, even when the child has done his best, it doesn't look like the book. Indeed one underprivileged boy spoke truthfully for all children when he said, "It looks like hell after I do it."

Now contrast this with the ease of writing the word "good" on the typewriter. At the first tap the "g" is finished and is *perfect.* No break in the child's thoughts, and only the delight of success. These children always wanted to write

their names on the machine first; and when they looked at it, a smile would spread over their faces, and they would almost shout, "Why, it looks just like the book." Think of the thrill to a youngster of making his writing look like the book, and with no effort! In this thrill of success, psychologists know, lies an encouragement to progress that the child who is conscious of awkward bungling can not achieve.

This helps explain why practically all of us dislike so to write down our thoughts with a pencil or pen. It is doubtless largely a carry-over from the actual physical agony we went through in childhood learning to write. People talk all day long to each other without any effort. Our thoughts just flow naturally through our tongues. But when it comes to writing our thoughts, that is another matter. A pencil at the end of a child's fingers is an obstacle to expression. But when we equip the child's fingers with a typewriter, he can express his thoughts almost as easily as with his tongue. Such facility in expression enlivens the whole learning process.

Among other phases of the experiment it should be mentioned that the Experimental children learned punctuation, the correct use of capitals, correct indentation at the beginning of paragraphs and all the mechanical features of good writing much more readily than did the Control children.

Incidentally, voluminous testimony of teachers indicates that the backward, shy and non-cooperative children—always a classroom problem—found a new sense of power at the typewriter, and hence gained self-confidence, general scholastic improvement and better adjustment to the group.

Another fact of great importance was the considerable reduction in eye strain. The first graders were given typewriters with large primer type. No doubt this helped. But probably the greatest reduction in eye strain was the ease of writing on the machine and of reading what they wrote.

Summing it all up, the experiment abundantly demonstrates that the typewriter can be made a distinct aid to fundamental education, all the way from the kindergarten through the grades, and possibly farther. It can be introduced into any schoolroom without putting an extra burden on the teachers. About one machine for every four pupils is sufficient. Even one machine for every seven or eight pupils would make a profitable addition to the equipment of any grade school. Over 90 per cent. of the teachers stated that the use of the typewriter by several children, each waiting his proper turn, and watching each other's work, tended "to develop cooperation and mutual helpfulness," and that the care of the machine, books, papers, etc., used with them "increased the sense of personal responsibility." Over three fourths of them expressed the belief that "it widened the child's interests and understandings," "developed self-reliance in making and executing plans," "gave practice in the use of tools, implements and material useful in later life," and gave a "greater opportunity for the exercise of the best of the child's natural tendencies."

(*Author's note:* Historically-minded readers will recall the pioneering experimental work in 1904 of J. McKeen Cattell with the typewriter as reported in his presidential address at the Ninth International Congress of Psychology at Yale in 1929. The author believes that Dr. Cattell's suggestions regarding the typewriter as an instrument for psychological research have been amply justified.)

ALBERT EDWARD WIGGAM

THE EXTENSION OF "EDUCATION FOR DEFENSE" IN CZECHO-SLOVAKIA

THE introduction of the "Education for Defense" in Czecho-Slovakia in 1936 has met with considerable success in that country.[1] According to the new leaders of the "second" Czecho-Slovakia, the system will have to be now extended from the moral and physical standpoint and added to the curriculum of the high institutions of learning. Its elements are now being included in the existing curricula.

All students of the Czecho-Slovak nationality must take such courses up to the end of the semester during which they will reach their thirtieth year of age. Otherwise the students must graduate from this two-hours weekly course during the first year of their attendance

[1] J. S. Roucek, SCHOOL AND SOCIETY, 47: 413-5, March 5, 1938.

and pass a compulsory examination at the latest at the end of the fourth semester (that is, at the end of the second year). Otherwise they are not permitted to register for the third year of their studies. The fee for such an examination is Kč 10 (about thirty cents). The instructors in the subject are higher army officers qualified also by their necessary training in the higher institutions of learning.

Physical aspects of this type of education are also compulsory for all students up to the end of the semester during which they will have achieved their twenty-second year of age. Two hours of the first two semesters are devoted to it; the attendance is controlled and certified to in a special document ("index"), which must be presented to the administrative officers of the institutions as well as to the military authorities. This education has been assigned to the institutions for physical education in Prague, Brno, Bratislava and Turčianský Sv. Martin. This means that the Prague organization will train some 11,000 male and female students, 4,400 in Brno. The most definite training will be carried on in camps during vacations between the first, second and third years of studies for fourteen days. The instructors are being trained already in the camp at Letčí nad Sázavou.

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QUOTATIONS

THE RIGHT SCHOOLING

TO-DAY the Board of Education publishes another of those far-reaching reports which it is accustomed as need arises to receive from its Consultative Committee. This time the committee has considered secondary education, particularly as it is given in grammar schools and technical high schools, and has drawn a broad conclusion which can be understood by all and is uncompromisingly stated. "The existing arrangements for the whole-time education of boys and girls above the age of 11+ in England and Wales have ceased to correspond with the actual structure of modern society and with the economic facts of the situation." The report therefore, though the Board of Education is not committed to its recommendations, deserves the prompt publication which has been given to it, for so fundamental a conclusion points to a state of affairs which can not but act adversely upon the whole of society. Indeed this is insisted upon in various passages in the report. The future of democracy, the committee suggests, depends on the fitness of the education given to its citizens; and the present type of grammar school education, for reasons which are lucidly set forth in a historical chapter, dates from a past age and is too heavily weighted by tradition. As the historical chapter also makes clear, this is not the first time that educational practice has been out of harmony with social needs and conditions; but the present is a critical moment in the development of the nation, and, while the world has moved rapidly in the last thirty years, so also has educational theory. A truer psychology now prevails; the pupil is more thought of than the subject of study; school is a cooperative society in which state, staff and parents are brought into relation, and more importance is attached to individual personality than formerly. All this is evident from the present report, which as an exposition of the purpose of education takes every intelligent reader into confidence.

The committee's remedy for a curriculum which may be briefly summed up as too bookish takes two main forms—reform of that curriculum, and the establishment of an alternative type of school for those pupils who desire it or would find it more congenial. For this latter purpose the committee has been fortunate in finding a model already in existence, for it is able to speak in high terms of praise of the work done by, and the education given in, those junior technical schools which provide a wide and general (but not a specific) education for pupils who leave at the age of sixteen in order to go into industry. On such a basis the committee, which for reasons given is not in favor of multilateral schools as a principle, looks to the establishment of technical high schools for pupils between the ages of eleven and sixteen, to be equal in status—an important point—with the grammar schools, but to give after the age of thirteen (at which age transfer of pupils if

necessary could be effected) all education of a much more practical nature than the grammar schools, though by no means without book-learning as well. The technical high schools would not give specialist training, but they would inspire and prepare pupils for a practical as opposed to a clerkly life, thereby meeting the bent of many whom a literary education does not satisfy or sufficiently develop, and reducing also the ever present danger of a surplus of blackcoated workers and discontented "intellectuals"—square pegs in round holes. Ultimately, since the report looks far ahead, there would be an equalization in respect of status and its concomitants not only between the grammar schools and the technical high schools, but also between all secondary schools with such consequences, when the national finances allow, as a hundred per cent. system of free places and the raising of the leaving age to sixteen. But these ultimate developments will take time and will require legislation.

Easier to effect are the committee's recommendations for the revision of the curriculum, and the overhauling of the school certificate examination, which tends to dictate the curriculum rather than to follow it and often puts a severe strain upon those who have to take it. The chapters on these subjects stand rather apart from the rest of the report, but there is no question of their supreme interest, and they may be held to have an application beyond the grammar schools. For the grammar school itself the committee has had to contemplate as it were two educations—the first a complete and rounded whole for pupils who leave at the age of sixteen, and the other, a natural continuation of it, for those who stay on and form that element in the school which is known as the VIth form, on the importance of which the report lays much stress. The claims of the two therefore are not to clash. Among the subjects most strikingly insisted upon by the committee are the teaching of English and of the art of self-expression in English—here many of the best schools are regrettably weak; and a knowledge of the contents of the Bible, which the committee would like to see as a regular subject throughout the school to be taught by specially qualified teachers, the books of the Bible to be read for the meaning which they had for their first readers—much as, presumably, the graver classics are read at the universities. The committee envisages the acquisition of two foreign languages, of which one would be Latin, by those who can profit by them. Mathematics, the committee thinks, should be reduced in content, while science should be general rather than specialist—girls for instance are at present asked to do too much botany—and astronomy might have a place given it. There are strong recommendations also for greater attention to music and drawing; and the physical side of education is equally insisted upon; on this aspect of school life the chapter on mental and physical development has its due bearings. Many of these proposed modifications of the curriculum are calculated, when taken as a whole, to introduce substantial changes into grammar school life, and in so far as they involve little more than a change of emphasis they are such as could be adopted forthwith. The fostering of "the highest degree of individual development" of which a pupil is capable, is the committee's criterion of a curriculum. It is a declaration of the end of education such as could hardly have been formulated a generation ago; and there is up and down the report much to show how all through school life special aptitudes may be encouraged and the best made of successive opportunities. For instance it is pleasant to see the principle recognized that pupils attending county grammar schools will probably have to live in or on the country; hence rural interests are to receive encouragement.

It is a long report and no perusal of the many recommendations at the end of the volume will serve as a substitute for the study of the whole. Much of it, happily, is well within the comprehension of every intelligent citizen, who will find in it a clear statement of the true aim of education; much again is for administrators and teachers, who will be in a position to make experiments for themselves on the lines of many of the recommendations. Certain ulterior projects will require time, legislation and money; but as they are here set forth they offer a goal and sketch a course by which educational policy can be or must be guided as the perpetually changing social conditions of the country necessitate. By implication the report covers a wider ground than that delimited by the terms of reference; in reality all secondary education—and the secondary system is at present very com-

plex—is concerned in it, since all secondary schools profess to train for good and useful citizenship and a common psychology applies to all. The Spens Report, as it may come to be known after the name of the chairman, Will Spens, is the work of a committee representing many types of educational interest, and it bears signs of having received the ablest assistance from the board and from a number of specialists.—*The London Times.*

REPORTS

SECONDARY EDUCATION IN ENGLAND[1]

THE Consultative Committee of the English Board of Education has now completed its series of Reports which look to a reorganization, internal as well as external, of the English system of education. In England as in the United States the current period of political and economic crisis will stand out in the history of education as a period of educational stock-taking and planning for the future. The educational needs of England had already begun to be recognized during and immediately after the war; the recognition of the needs prompted the inquiries by the Consultative Committee of which the present one on "Secondary Education" is the fourth in a series, which includes "The Education of the Adolescent" (1926), "The Primary School" (1931) and "Infant and Nursery Schools" (1933). The Report on "The Education of the Adolescent," usually referred to as the Hadow Report, pointed to the necessity of inquiring into the type of education provided and needed in the pre-adolescent period on the one hand, and into that part of post-primary education, that is, secondary, which had not been included in the terms of reference to the Consultative Committee in 1924.

"The Report of the Consultative Committee on Secondary Education" is the result of a reference from the Board of Education to the committee in 1933: "To consider and report upon the organization and interrelation of schools, other than those administered under the Elementary Code, which provide education for pupils beyond the age of 11 *plus;* regard being had in particular to the framework and content of the education of pupils who remain at school beyond the age of 16." The procedure of the Consultative Committee is more closely analogous to the procedure of the Educational Policies Commission in this country than to a survey or committee investigation. The full committee sat on 74 days between October, 1933, and September, 1938, and examined 150 witnesses. In addition subcommittees, to which a number of members were coopted from outside, were appointed to consider various aspects of the reference and sat on 36 days and examined 22 witnesses. Unlike surveys conducted in this country, the Reports of the Consultative Committee are based on a canvas of lay and professional opinion, not only in Great Britain but also abroad. Thus the list of witnesses includes representatives of the Board of Education, directors of education and members of local education authorities, associations representing members and officials of local education authorities, organizations representing teachers, other organizations, individual witnesses and organizations and persons who sent memoranda, statistics and other data. The list includes the names of Professor C. H. Judd, Professor W. H. Kilpatrick, Dr. John L. Tildsley and the present writer, whose "Memorandum on the Secondary School Curriculum" is included as Appendix III of the Report. It is important to stress the procedure, which means that the subject has been canvassed as thoroughly as possible; the Report is not likely to escape criticism, but at least it represents a wide body of opinion that can not be ignored. It is only necessary to contrast this with the innumerable commissions in one field—secondary education—which in this country go on simultaneously or succeed each other rapidly, and in the end represent only the opinions of the members of the commission.

It is obvious that no aspect of the many problems of secondary education can be understood without an intelligent understanding of the historical forces that have moulded it. No branch of education, indeed, is so encrusted with traditions, social and curricular, as that which has

[1] "Report of The Consultative Committee on Secondary Education." His Majesty's Stationery Office, London, 1938. The Report may be obtained in this country from the British Library of Information, 247 Madison Avenue, New York. $1.05 postpaid.

come to be known as "secondary." The first chapter of the Report is devoted to a scholarly "Historical Sketch" by the secretary of the committee, Dr. R. F. Young, to whom the world of educational scholarship is already indebted for his two monographs on Comenius ("Comenius and the Indians of New England," 1929, and "Comenius in England," 1932), and who also contributes a section (Appendix II) on "The Development of the Conception of General Liberal Education." The conclusions of the historical chapter and Chapter II on "The Present Position" "leaves us with the general impression that the existing arrangements for the whole time higher education of boys and girls above the age of 11 *plus* in England and Wales have ceased to correspond with the actual structure of modern society and with the economic facts of the situation"—a conclusion not unlike that reached in the Report of the Regents' Inquiry, "Education for American Life."

Although the terms of reference limited the committee to an inquiry into secondary education, which, roughly speaking, would correspond to academic courses in American high schools, the historical approach inevitably broadened the scope of the inquiry to include all types of post-primary education. Accordingly the Report includes not only the traditional secondary schools, referred to as "grammar schools," but also the modern schools, selective and non-selective, discussed in "The Education of the Adolescent," and a new school, the "technical high school," the creation of which is recommended by the committee. The parity of schools at the post-primary level is insisted upon by the committee, which has not ignored the alternative—the multilateral or what is called in the United States the comprehensive high school. The reasons which weighed with the committee against the multilateral school are: (1) The size of the school would have to be very considerable, say 800 or possibly larger; the majority of pupils gain more from being in smaller schools. (2) The difficulty of securing adequate sixth forms in ordinary grammar schools as a result of the large proportion of pupils who leave before or at about the age of 16. (3) The difficulty of finding principals who would be as competent to control and inspire the steady evolution of the curriculum and teaching in "modern schools" as well as in grammar schools. (4) Special courses in multilateral schools would not be a satisfactory substitute for junior technical schools (or the proposed technical high schools).

The parity of schools is to be promoted by the adoption of one code of regulations governing all post-primary schools, equal treatment in size of classes (30 or at most 35) and school buildings for all grammar and "modern" schools, abolition of fees as soon as national finances warrant and the adoption of 100 per cent. "special places" (*i.e.*, free tuition or reduction of fees) in fee-paying and grant-aided grammar schools and the extension of the age limit for school attendance to 16 in all schools. Another important step to secure a certain parity is the recommendation that curricular differentiation in different schools should not be begun before the age of 13, thus leaving open for two years longer than is now the case the opportunity of transfer from one type of school to another, especially from the modern to the grammar or technical school. This imposes upon teachers the necessity of a review of the achievements and abilities of pupils at the end of the first two years of their work.

In the light of the tradition of secondary education the discussion and recommendations on curriculum are significant. At the primary level a new note has already been struck in England in the Report on "The Primary School" and in the Board's "Handbook of Suggestions to Teachers" (1937). At the post-primary level it is urged that "before everything else the school should provide for the pre-adolescent and adolescent years a life which answers to their special needs and brings out their special values. . . . In our view a school fulfils its proper purposes in so far as it fosters that growth (*i.e.*, the free growth of individuality among its potential citizens), helping every boy and girl to achieve the highest degree of individual development of which he and she is capable; and all that we say about the curriculum of the school is to be applied in the light of this declaration. . . . And we have adopted the further principle that, while studies should not be introduced which are beyond the present comprehension and unrelated to the present experience of pupils, yet, especially towards the end of the course, studies may well be introduced to a limited extent which have a definite bearing on the next stage of their life,

whether that be a future occupation or continued education at a school or university." The curriculum should be based on "the national tradition in its concrete individuality" and on the conservative and creative activities of a community, that is, "the multifarious activities which secure the community's continued existence and maintain its 'standards of life'" and "the activities of poets, of dramatists, of painters, of musicians, of men of science, inventors and the higher classes of administrators and inventors."

The grammar school curriculum for pupils between 11 and 16 should fulfil the following conditions: (1) It should be related to the natural activities of body and mind during that period, and both illuminate and guide the pupil's experience. (2) "It should develop and harmonize the powers of body, will, intellect, emotion and conscience. (3) It should not consist to any considerable extent in courses which are only of value if the subjects are carried further. (4) It should be reasonably 'all-round,' while giving full opportunity for the pursuit of individual interests. (5) It should stimulate or create the desire to continue some form of study whether or not the pupil leave school at 16. Provided these conditions are satisfied the Committee desires to leave as much freedom as possible to schools in the selection of studies and in their content." The central core of the curriculum is to be made up of English subjects—English, Scripture, history, geography and literature; the other subjects recommended are languages, mathematics, science, music, art, handicraft, domestic subjects and physical education. Country grammar schools should adapt their work to the rural environment.

On the vexed question of the First School (Certificate) Examination, taken normally at the end of the first four years of secondary education, the committee recognizes the difficulties which have arisen and recommends greater freedom for individual candidates in the choice of subjects, with a reduction in the content of the examination syllabuses.

The curriculum of the proposed technical high schools, which are intended to provide a good intellectual discipline and a technical value in relation not to one occupation but to a group of occupations, should be broadly the same as that in other types of secondary schools for the first two years. Beyond that the curriculum "should be designed so as to provide a liberal education with science and its applications as the core."

The Report is an important and substantial contribution to one of the most vexing and disturbing problems of the age everywhere. It has been impossible in this review to deal with more than some of the more general aspects of these problems. In addition to those mentioned above the serious student will find in the Report "A brief outline of the more salient features in the physical and mental development of children between the ages of 11 *plus* and 16 *plus*" (Ch. II); a "Historical note on faculty psychology" (Appendix IV, by Dr. Cyril Burt); a "Memorandum on the cognitive aspects of transfer of training" (Appendix V, by Dr. H. R. Hamley); a discussion of "Certain other subjects in which the Committee have recommended substantial changes, namely: English; Classics; Mathematics; General Science" (Ch. VI); "Administrative problems" (Ch. IX); "Welsh problems" (Ch. X); and a "Memorandum on some influences affecting secondary curricula in the Dominions" (Appendix VI, by Professor Fred Clarke). Not the least valuable part of this, as of other Reports of the Consultative Committee, is the "Summary of principal conclusions, suggestions and recommendations" (Ch. XI).

Perhaps one of the most difficult of the many problems, the preparation of teachers for post-primary schools, has not been discussed adequately; the one page devoted to the subject is the least satisfactory in the whole Report. Another serious omission, in view of important contributions made to the subject, is the failure to discuss as substitutes for the existing system of examinations the certification of pupils by the schools, although this method is approved for the proposed technical high schools, or the introduction of new type or objective tests as part of the examination. Finally, it is doubtful whether the present methods of selecting pupils for the different types of schools are adequate, although here no one has yet proposed a satisfactory alternative. Nevertheless, the main issue is recognized by the Consultative Committee, for the theme of the Report is indicated by the quotation on the title page of Rolland d'Erceville's *Chacun doit être à portée de recevoir l'éducation qui lui est propre.*

The Report, already generally referred to in England as the Spens Report (Mr., now Sir, Will Spens succeeded Sir Henry Hadow as chairman of the Consultative Committee in 1934), does not present a plan which can be immediately put into practice. Although the Board of Education is, indeed, not committed to acceptance of its conclusions and recommendations, it may be expected that the Report will serve as the starting point and basis for the reconstruction of secondary education in the immediate future.

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EDUCATIONAL RESEARCH AND STATISTICS

WHAT YOUTH WANTS AND WHAT IT GETS FROM SCHOOL[1]

HISTORICALLY, it has not been good form for teachers to ask their pupils what they want to know. Half a century ago, the best argument against elective courses in colleges, as to-day the best argument against the so-called progressive schools, is the obvious fact that young people do not know what is good for them. Increasingly, however, educators have acquired misgivings; and while we are not ready to concede that young people know both what they want and what is good for them we are more ready than ever to consider what they have on their minds.

In the course of revising a manual for teachers on sex education in the secondary schools for the U. S. Office of Education and the U. S. Public Health Service, there was opportunity to hear from large numbers of educators in all parts of the country, and to confer with groups in some fifteen cities. Incidentally, we received a considerable mass of "documentary" evidence from secondary school boys and girls, which indicates the more pressing problems on which young people want help, and some of the questions that most concern them.

In a California city, for example, some 540 boys and girls in a technical high school and four junior high schools, replied anonymously to several questions regarding the biology course which they had just completed. To the question, "What part of the course has been most helpful?" 75 per cent. said either "Study of the human body" or "Reproduction and sex hygiene." To the question, "Has the course given you any ideals that will be of value to you in your social contacts, in your choice of a companion in marriage and in the establishment of a home?" 94 per cent. replied in the affirmative. To the question, "Judging from what biology has meant to you, do you think that all boys and girls should take the course?" 96 per cent. replied in the affirmative. The suspicion that these responses reflect chiefly the personality of an exceptional teacher is to a degree allayed by considering the statistical probability that children in five different high schools were equally favored.

AT JUNIOR HIGH SCHOOL LEVEL

After a series of talks by Dr. Valeria H. Parker, a well-known lecturer on social hygiene, the boys of a junior high school in a Pennsylvania oil town were invited to write out any questions on which they wanted information, without giving their names.[2] Almost half the questions have to do bluntly and unequivocally with sex and reproduction as biological problems of universal and personal interest. Among these the venereal diseases are mentioned 19 times. In addition, there are 18 questions on what is commonly recognized as a deviation from normal sexuality—masturbation, rape, homosexuality, sadism, et cetera. Of questions related to what we may consider social aspects of sex, 22 are on kissing, necking, drinking and smoking, Negro-white mating, nudist colonies and prostitution.

The spelling and the wording of these question, as well as some of the questions themselves, suggest that the writers are a culturally backward, uninformed and perhaps naïve group of boys.

After somebody else gets the syphilis from you does it leave you or does it stay with you?

[1] Read before Section Q—Education, American Association for the Advancement of Science, Richmond, December 29, 1938.

[2] Since the above was written, Dr. Parker has published most of the questions in this group, as well as material from other sources, in "What Young People Want to Know about Sex," *Child Study*, 16: 88–89, 108, January, 1939.

Is there anything wrong with kissing? If so, what is it?

How can we find out the better words to use if we find it necessary to talk about such things?

How do you go about asking your wife if you would like to have some children in the family?

One is impressed, also, however, by the seeming maturity and sophistication of some of the questions—they must be a rowdy, hard-boiled lot of youngsters in this junior high school.

Will it really hurt anything if a boy and girl have sex relations if the boy wears a safety and neither have any diseases?

Is it wise to use a safety more than once?

How can a boy tell when a girl wants or doesn't want sexual intercourse?

Can you have sexual intercourse without giving the girl a baby?

Both generalizations are probably equally valid: the juveniles in this kind of community include ignorant, crude, naïve boys and very wise, sophisticated, insensitive—and equally naïve—other boys.

What is the time for doing the sex stuff before you are married?

Will boys be sent to prison if caught in sexual intercourse?

At the Junior College Level

Of 60 questions asked by young women in a junior college in a prosperous western city, 31 had to do with various phases of courtship and marriage.

How can a girl avoid attentions or expression of feeling which she would rather not receive without seeming to be a prude or giving offense to a boy?

Why is it that boys expect you to neck with them when you go out? I know I certainly haven't encouraged them. And if you don't they think you are a bad sport and don't usually come again. I met only a few who really go out for a good time and I know we really enjoy each others company much more.

Do you think that a wife should have children just because her husband likes children, if she does not even care for children at all?

When a couple are married is it right for each of them to go out with another man or woman just so they will not get bored with each others company?

Again, we find a great range in general or social sophistication:

What does maternity mean?

Should you discuss having children before you are married?

"Talking about birth control" where can a girl go to find information about herself if she is shy or does not have the money enough for a physician? Physiology in school does not seem to be enough. A person does not get enough about birth, etc., in one year. I think there should be some subject or course by someone who is frank and does not have school laws to hold them back.

Trade-school Girls

In a girls' trade school in a mid-western city, 95 anonymous questions on scraps of paper disclosed different kinds of concerns. Over 20 per cent. of these questions were on menstruation; 31 were about pimples, perspiration, skin and hair; 18 were about social conduct, petting, "going steady"; and 14 on miscellaneous health problems, including sexual relationships and disease. Most of the health questions imply more than an academic interest in "health" or in physiological processes, or in beauty for its own sake. A girl asks, "How can one get rid of perspiring feet?" One question that is ever present was fairly well formulated by one girl:

How may one cultivate the habits that might cause one to have boy friends?

The same need may be expressed in various ways:

Would it be best to puck your eye brows and wear a lots of make up for boys to fall for you?

Do the boys think any more of a girl if she smokes and drinks than if she doesn't?

If we may judge by their writing and spelling, this group represents probably the most ignorant young people of all regarding whom we have any information. The questions, however, although often elementary, are not very different from those of boys, mixed groups or junior college girls.

Anxiety as well as ignorance regarding social usage and the proprieties are, as we should expect, always present in any group that has not yet attained the self-assurance of having arrived. Some of these questions are not very different from those constantly being sent to the newspaper's feminine counselor:

Is necking dangerous?

Does the boy expect the girl to kiss him goodnite after he has showed her a good time?

How many nights a week should a high school girl go out and how late should she stay out?

Essentially, young people want to know how to be attractive, how to make themselves liked, how to get along with people. And they have one eye, more or less clear, on love and marriage:

Is it necessary to know all about a boy's life and where he is from before going out with him?

Should young people have any sexual relationship?

If you are going steady with a fellow and you see another boy you like better how would you break it to the old boy friend?

In addition, young people want to know the meaning of the world's great secret about sex and reproduction, about the facts and the reasons for secrecy, and about the whispered dangers:

Is there any way one can tell if her friend has syphliss? Is it easily contracted when two are near each other?

Are people like dogs? Do they mate while in administrative period? I've heard people are not supposed to have contact during a woman's administrative period. Why?

Other material examined included preliminary summaries of returns from 20,000 questionnaires to boys and girls in 25 cities, by a committee of the Department of Health, Physical Education and Recreation of the National Education Association; and the results of a classroom experiment at the university high school of the Colorado State College of Education.[3] In cities and in towns, in the East and in the West, among the poor and among the well-to-do, the young people make two demands. A very large proportion of both boys and girls were interested in problems dealing with sex. The second interest among both boys and girls had to do with the relationship of the individual to the group in terms of generally recognized values: the girls were concerned with "looking nice," the boys with being strong and powerful. That the first choice and the second choice are not independent variables is, of course, easily understood by those who have thought about the matter.

What College Seniors Think

In a cooperative study among 105 colleges, college seniors were given an opportunity to report upon and to criticize the instruction which they had received in physiology and hygiene, both as high-school students and as college students.[4] In summarizing the criticisms of students Dr. Rogers says, "By far the most numerous complaints of omission, and suggestions for addition, refer to matters concerning sex." Educators should find some of the student comments significant.

Sex knowledge should be learned in school and not from the street.

A thorough course in hygiene would, I believe, cut down the number of forced high-school marriages.

More good information on sex should be given in high school. Too many girls go through college with a horror of married life and sexual relationship.

The only reference made in college to sex hygiene was in the form of description of bad results of venereal infections—giving a distorted and unreal picture of the whole sex problem.

The differences of the sexes and questions pertaining thereto were adroitly evaded, but with the unhappy result that the question of sex was even more intriguing to the average student (myself included) than it would have been had it been presented with tact, finesse, and understanding. Most often young boys and girls acquire knowledge about sex not too early but rather from sources which give them the wrong "slant" on the subject.

The discussion of sex should be elevated from the corner curbstone to the high school and college classrooms. It should be discussed frankly and not in subdued tones as an almost tabooed thing. Venereal diseases and misinformation are too prevalent for us to think that only the lower strata of society are lacking knowledge. Do something about it, please!

Professional Educators Agree

In the correspondence on the revision, hundreds of superintendents and high-school principals and teachers, and others actively concerned with adolescent boys and girls, were in agreement that it is in every way desirable to have the schools furnish information and guidance regarding sex and family life, the pre-

[3] James A. Michener, *The Clearing House*, pp. 461–465, April, 1938.

[4] "Student Interests and Needs in Hygiene," by James Frederick Rogers, M.D., consultant in hygiene, U. S. Office of Education, Bulletin, 1937, No. 16. Government Printing Office, Washington: 1937.

vention of venereal disease and related problems. Only five men objected.

The superintendents and other people concerned with boys and girls are aware of undesirable conditions in the community, of maladjustments on the part of individuals, of defective management of personal affairs, and of marital and social difficulties that can often be attributed to faulty education and guidance. Comparatively few school men speak of the positive gains to be expected from suitable educational practice, in terms of more vigorous and more harmonious growth of personality. Some, however, do stress these positive aspects—training for marriage and parenthood, education for "mixed social relation" and for mental health:

> Include relations that are not taboo, as well as the taboo. Include relationships and responsibilities of marriage. Soft pedal social diseases somewhat. Fear is not a wholesome motive for continence.
>
> 1. Emphasis on the ideal relationships.
> 2. No dependence on fear as deterrant.
> 3. Frank treatment of biological facts in non-technical language.
>
> Emphasis on social side of the matter—point out relationship of sex and happy home; and relationship of happy home to a strong community and country.

WHY PICK ON THE SCHOOL?

Among the letters are many from men who speak of the failure of the home, of the church and of other agencies to carry on educational functions which have never been formally demanded of the schools, but without being certain that the school must of necessity assume the responsibility. Granting all the shortcomings, why pick on the school to do what we all agree is necessary?

The only answer to this question seems to be that we have no other agency that is both general, in the sense of reaching practically all the children, and amenable to a common social purpose. To say "Let the parents do it," or "Let the pastor do it," or "Let the doctor do it" is to say, in effect, let the advertiser, the movies, the cheap magazine, the roadhouse, the shop window continue to do it. We have no way of directing these agencies to serve a purpose that is acceptable to the entire community, even in principle: the school is, at least theoretically, an instrument of all the people. There is the further technical point that the school is probably the most adaptable of all our educational agencies in fitting itself to meet new aims through a reeducation of its personnel.

OBSTACLES

School people typically consider attitudes of parents the chief obstacle to their direct approach to the task. There is evidence, however, that the parents are well disposed and ready to cooperate. Wherever they have an opportunity to assert themselves, parents are not only well disposed, but they are ready to go to school themselves. They are, in fact, attending study groups, reading on their own, listening to lectures and discussing informally among themselves in order to be better able to help the young people and to cooperate more effectively with the schools.

A prominent feature of many of the adult education programs, especially of those developed under WPA auspices, is the class for parents on various phases of child development, including orientation with respect to sex guidance of children. It would be rather naïve, however, to defer work with adolescents, as one superintendent suggests, until a generation of parents can be properly educated. The education of children does in fact begin with their parents; but educators must take some responsibility for catching the parents while the latter are still young, and in the school's educational custody.

DIFFICULTIES

The chief difficulty mentioned by the educators is the lack of suitably trained personnel. While this is a serious difficulty, it need by no means be treated as a final reason for dropping further consideration of the matter.

In one large city a general science syllabus had been referred back to the superintendents because the unit on reproduction stopped short with birds and fishes: some of the commissioners supposed that secondary school students, if they were to study about reproduction at all, might well be expected to learn something about mammalian reproduction. After long deliberation, the educational experts enumerated several reasons, or rather, rationalizations, for keeping the syllabus truncated as submitted. One item, how-

ever, seemed to be perfectly sound: *our teachers are not prepared.*

To leave the matter here, however, is to evade a serious responsibility; it is like accepting chronic malnutrition in an orphanage on the ground that the cook, who is otherwise competent, does not understand vitamins. It may be difficult to dislodge the cook, but her limitations can not justify the permanent misfeeding of the children.

In many communities, ancient fears and taboos manage to make themselves felt. In one New England town the school committee explicitly forbids the presence of "sex literature" and "sex education" in the schools. Until this past year, one of the large Middle Western States lived under a statute requiring all school districts with a population of 3,000 or more to engage competent instructors of physical education and to furnish health and physical education—with the proviso, however, that nothing in the chapter might be construed "to allow the teaching of sex hygiene and kindred subjects in the public schools" of the state.

These circumstances might appear to block teachers effectively, regardless of their competence and willingness. This is not, however, a fair picture of the situation. The question is really whether educators can assume responsibility, as against losing it to others by default.

The public wants its children to be healthy physically and spiritually; it wants its children to be well adjusted, well informed, well equipped for life in a democracy. But the public does not insist upon telling the responsible expert, whether in medicine or in education, just how to carry on his work, what he may or may not do. If the latter is himself clear-headed in understanding the needs of the public and single-hearted in serving the interests of the public, he is likely to have all the authority for which he is willing to take responsibility.

TEACHERS TO-DAY AND TO-MORROW

We know definitely what youth wants and needs; we know pretty well too what it gets from school—or fails to get. As a responsible professional group the educators have an opportunity to meet the inevitable half way. For the demands of youth will be served, if not by us willingly and constructively, then by others through suffering and waste. These demands are inevitable, whether or not we approve them; for they represent not the whims of foolish wanton children, but the very forces of life and growth and such achievement as lies within the capacity of any generation.

The first step for educators is to make use of existing personnel and opportunities, confident that the parents and the "public" they fear will back them up. The next step is to marshall existing resources for the better training of teachers—and there are resources, for the most part outside the educational "systems." This item is central: for these prospective teachers themselves are also prospective men and women, commonly themselves quite as troubled and confused as their contemporaries with other aims. And these teachers must be equipped, as mature and well-adjusted men and women, not merely for direct and immediate help to their pupils, but also for better personal adjustment as parents and spouses, and for their further aid in community action, especially in parent education. In the meantime, moreover, without waiting for any further warnings, mandates or appeals, the leaders in the profession should organize machinery for work with teachers in service and with parents.

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